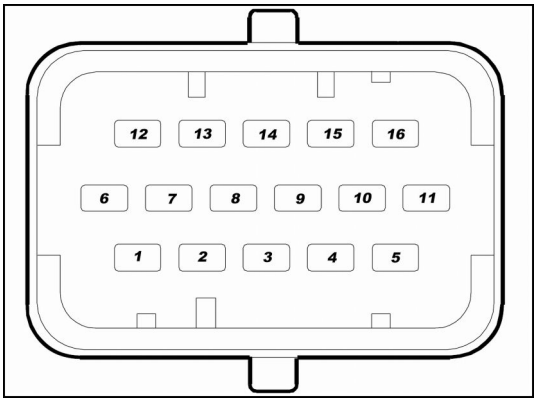


CONNECTORA 2

Electro injector connector A

ECU pin out for connector A

ECU pin	Wire color	Function
(1)	Purple	Solenoid valve for electronic cylinder 5 injection
(2)	Gray	Solenoid valve for electronic cylinder 6 injection
(3)	Blue	Solenoid valve for electronic cylinder 4 injection
(4)	Red	Solenoid valve for electronic cylinder 1 injection
(5)	Pink	Solenoid valve for electronic cylinder 3 injection
(6)	Yellow	Solenoid valve for electronic cylinder 2 injection
(7)	-	Free
(8)	-	Free
(9)	-	Free
(10)	-	Free
(11)	Orange	Solenoid valve for electronic cylinder 2 injection
(12)	Green	Solenoid valve for electronic cylinder 3 injection
(13)	White	Solenoid valve for electronic cylinder 1 injection
(14)	Black	Solenoid valve for electronic cylinder 4 injection
(15)	White	Solenoid valve for electronic cylinder 6 injection
(16)	Brown	Solenoid valve for electronic cylinder 5 injection

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Torque - Minimum tightening torques for normal assembly

METRIC NON-FLANGED HARDWARE

NOM. SIZE	CLASS 8.8 BOLT and CLASS 8 NUT		CLASS 10.9 BOLT and CLASS 10 NUT		LOCKNUT CL.8 W/CL8.8 BOLT	LOCKNUT CL.10 W/CL10.9 BOLT
	UNPLATED	PLATED W/ZnCr	UNPLATED	PLATED W/ZnCr		
M4	2.2 N·m (19 lb in)	2.9 N·m (26 lb in)	3.2 N·m (28 lb in)	4.2 N·m (37 lb in)	2 N·m (18 lb in)	2.9 N·m (26 lb in)
M5	4.5 N·m (40 lb in)	5.9 N·m (52 lb in)	6.4 N·m (57 lb in)	8.5 N·m (75 lb in)	4 N·m (36 lb in)	5.8 N·m (51 lb in)
M6	7.5 N·m (66 lb in)	10 N·m (89 lb in)	11 N·m (96 lb in)	15 N·m (128 lb in)	6.8 N·m (60 lb in)	10 N·m (89 lb in)
M8	18 N·m (163 lb in)	25 N·m (217 lb in)	26 N·m (234 lb in)	35 N·m (311 lb in)	17 N·m (151 lb in)	24 N·m (212 lb in)
M10	37 N·m (27 lb ft)	49 N·m (36 lb ft)	52 N·m (38 lb ft)	70 N·m (51 lb ft)	33 N·m (25 lb ft)	48 N·m (35 lb ft)
M12	64 N·m (47 lb ft)	85 N·m (63 lb ft)	91 N·m (67 lb ft)	121 N·m (90 lb ft)	58 N·m (43 lb ft)	83 N·m (61 lb ft)
M16	158 N·m (116 lb ft)	210 N·m (155 lb ft)	225 N·m (166 lb ft)	301 N·m (222 lb ft)	143 N·m (106 lb ft)	205 N·m (151 lb ft)
M20	319 N·m (235 lb ft)	425 N·m (313 lb ft)	440 N·m (325 lb ft)	587 N·m (433 lb ft)	290 N·m (214 lb ft)	400 N·m (295 lb ft)
M24	551 N·m (410 lb ft)	735 N·m (500 lb ft)	762 N·m (560 lb ft)	1016 N·m (750 lb ft)	501 N·m (370 lb ft)	693 N·m (510 lb ft)

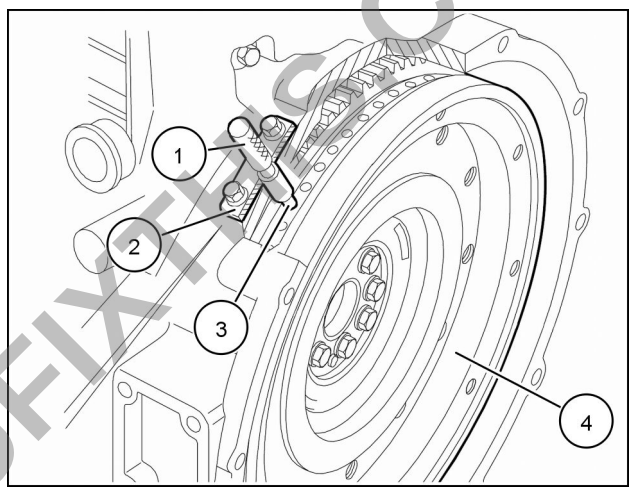
NOTE: *M4 through M8 hardware torque specifications are shown in pound-inches. M10 through M24 hardware torque specifications are shown in pound-feet.*

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Engine - Service instruction - Finding Top Dead Center (TDC)

1. Install the tool **380003118** to the flywheel housing in place of the starter.
2. Turn the engine flywheel in the direction of normal rotation.
3. Look for the hole with one reference mark that appears after the hole with two reference marks on the engine flywheel through the inspection hole on the bottom of the flywheel housing.
4. This closely indicates cylinder number one being on Top Dead Center (TDC) of the compression stroke.
5. To obtain the exact position of cylinder one TDC, remove the engine speed sensor.
6. Insert the tool **380000150 (1)** through the speed sensor hole.
7. The tool **(1)** should go into the hole **(3)** in the engine flywheel **(4)**. If not, turn the flywheel **(4)** in the direction of normal rotation until the tool **(1)** drops in to the hole **(3)**.
8. Remove the tool **(1)**.

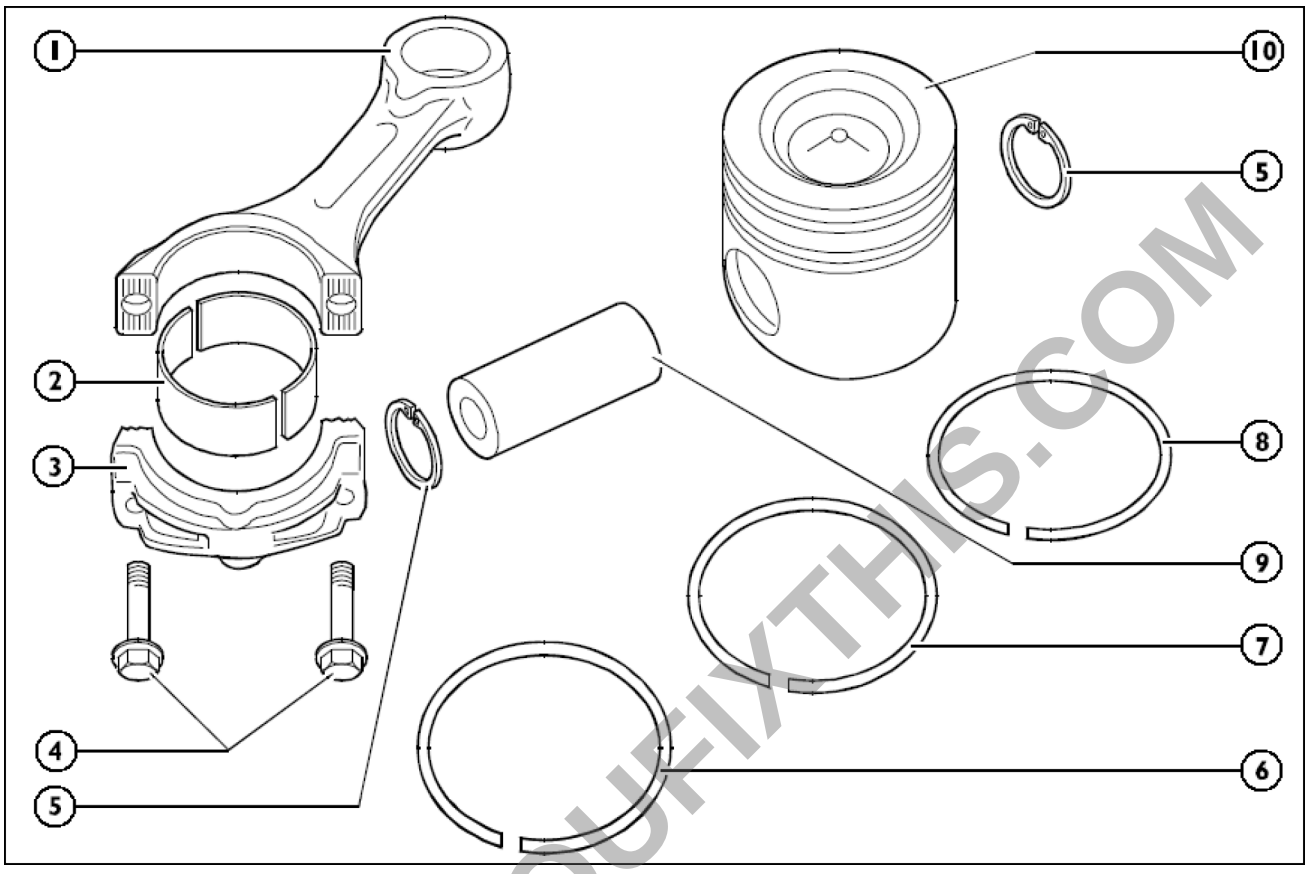


TOPDEADCENTER2 1

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Connecting rod and piston - Exploded view

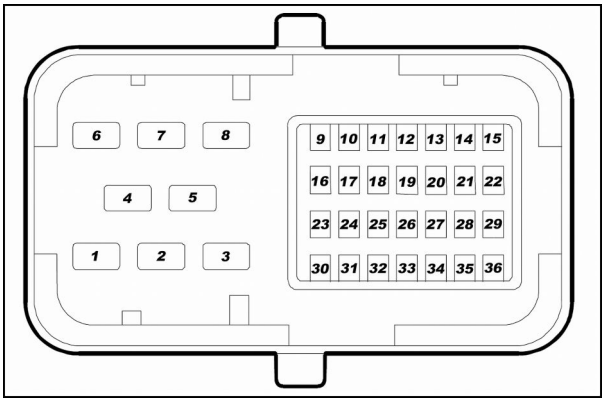


CONRODPISTON 1

(1) Connecting rod
(2) Half bearings
(3) Connecting rod cap
(4) Cap bolts
(5) Snap ring
(6) Oil control ring
(7) Bevel cut intermediate ring
(8) Trapazoidal combustion ring
(9) Piston pin
(10) Piston

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com



CONNECTORC 3

Sensor connector C

ECU pin out for connector C

ECU pin	Wire color	Function
(1)	-	Free
(2)	-	Free
(3)	-	Free
(4)	-	Free
(5)	-	Free
(6)	-	Free
(7)	-	Free
(8)	-	Free
(9)	White	Camshaft speed sensor
(10)	Red	Camshaft speed sensor
(11)	-	Free
(12)	-	Pressure sensor on rail
(13)	-	Pressure sensor on rail (ground)
(14)	-	Pressure sensor on rail
(15)	Pink	Coolant temperature sensor
(16)	-	Free
(17)	-	Free
(18)	Orange/Black	Fuel temperature sensor
(19)	Black	Flywheel speed sensor
(20)	-	Free
(21)	-	Free
(22)	-	Free
(23)	White	Flywheel speed sensor
(24)	Brown	Engine oil temperature/pressure sensor - (ground)
(25)	White	Air temperature/pressure sensor - (ground)
(26)	Yellow	Coolant temperature sensor
(27)	Orange/Black	Engine oil temperature/pressure sensor - (temperature signal)
(28)	Blue	Engine oil temperature/pressure sensor - (pressure signal)
(29)	-	Free
(30)	-	Free
(31)	-	Free
(32)	Orange	Engine oil temperature/pressure sensor - (power supply)
(33)	Red	Air temperature/pressure sensor (power supply)
(34)	Green	Air temperature/pressure sensor (pressure signal)
(35)	White/Red	Fuel temperature sensor
(36)	Orange	Air temperature/pressure sensor (temperature signal)

PREVIEW - YOUFIXTHIS.COM

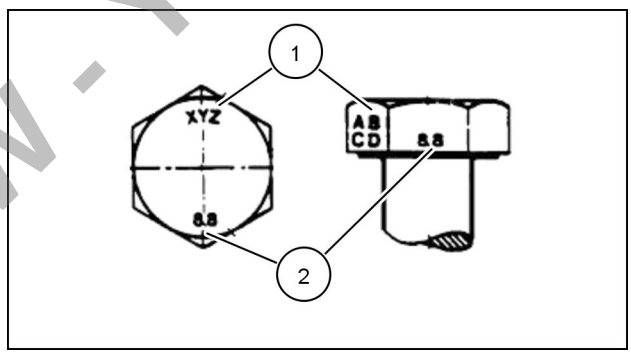
Download full manual at youfixthis.com

METRIC FLANGED HARDWARE

NOM. SIZE	CLASS 8.8 BOLT and CLASS 8 NUT		CLASS 10.9 BOLT and CLASS 10 NUT		LOCKNUT CL.8 W/CL8.8 BOLT	LOCKNUT CL.10 W/CL10.9 BOLT
	UNPLATED	PLATED W/ZnCr	UNPLATED	PLATED W/ZnCr		
M4	2.4 N·m (21 lb in)	3.2 N·m (28 lb in)	3.5 N·m (31 lb in)	4.6 N·m (41 lb in)	2.2 N·m (19 lb in)	3.1 N·m (27 lb in)
M5	4.9 N·m (43 lb in)	6.5 N·m (58 lb in)	7.0 N·m (62 lb in)	9.4 N·m (83 lb in)	4.4 N·m (39 lb in)	6.4 N·m (57 lb in)
M6	8.3 N·m (73 lb in)	11 N·m (96 lb in)	12 N·m (105 lb in)	16 N·m (141 lb in)	7.5 N·m (66 lb in)	11 N·m (96 lb in)
M8	20 N·m (179 lb in)	27 N·m (240 lb in)	29 N·m (257 lb in)	39 N·m (343 lb in)	18 N·m (163 lb in)	27 N·m (240 lb in)
M10	40 N·m (30 lb ft)	54 N·m (40 lb ft)	57 N·m (42 lb ft)	77 N·m (56 lb ft)	37 N·m (27 lb ft)	53 N·m (39 lb ft)
M12	70 N·m (52 lb ft)	93 N·m (69 lb ft)	100 N·m (74 lb ft)	134 N·m (98 lb ft)	63 N·m (47 lb ft)	91 N·m (67 lb ft)
M16	174 N·m (128 lb ft)	231 N·m (171 lb ft)	248 N·m (183 lb ft)	331 N·m (244 lb ft)	158 N·m (116 lb ft)	226 N·m (167 lb ft)
M20	350 N·m (259 lb ft)	467 N·m (345 lb ft)	484 N·m (357 lb ft)	645 N·m (476 lb ft)	318 N·m (235 lb ft)	440 N·m (325 lb ft)
M24	607 N·m (447 lb ft)	809 N·m (597 lb ft)	838 N·m (618 lb ft)	1118 N·m (824 lb ft)	552 N·m (407 lb ft)	

IDENTIFICATION

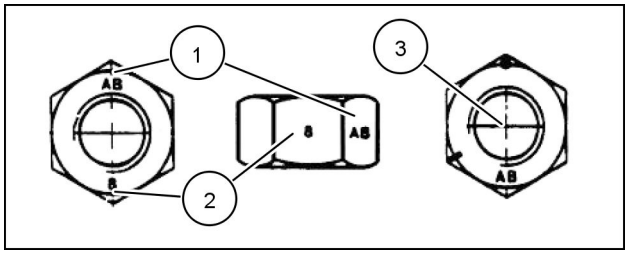
Metric Hex head and carriage bolts, classes 5.6 and up



20083680 1

1. Manufacturer's Identification
2. Property Class

Metric Hex nuts and locknuts, classes 05 and up



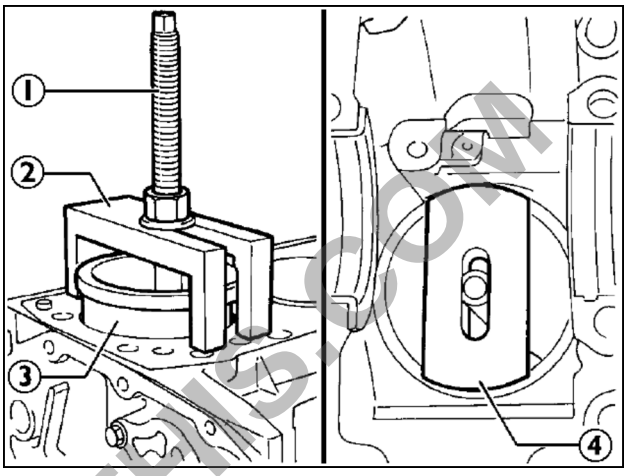
20083681 2

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

Crankcase Liner - Remove

Prior operation:
Connecting rod and piston - Remove (10.105)

1. Use tool **380000366 (2)** in conjunction with tool **380000152 (4)** as shown in the figure.
2. Check to make sure the plate **(4)** rests on the cylinder liner correctly.
3. Screw down the nut of the screw **(1)** and extract the cylinder liner **(3)** from the crankcase.



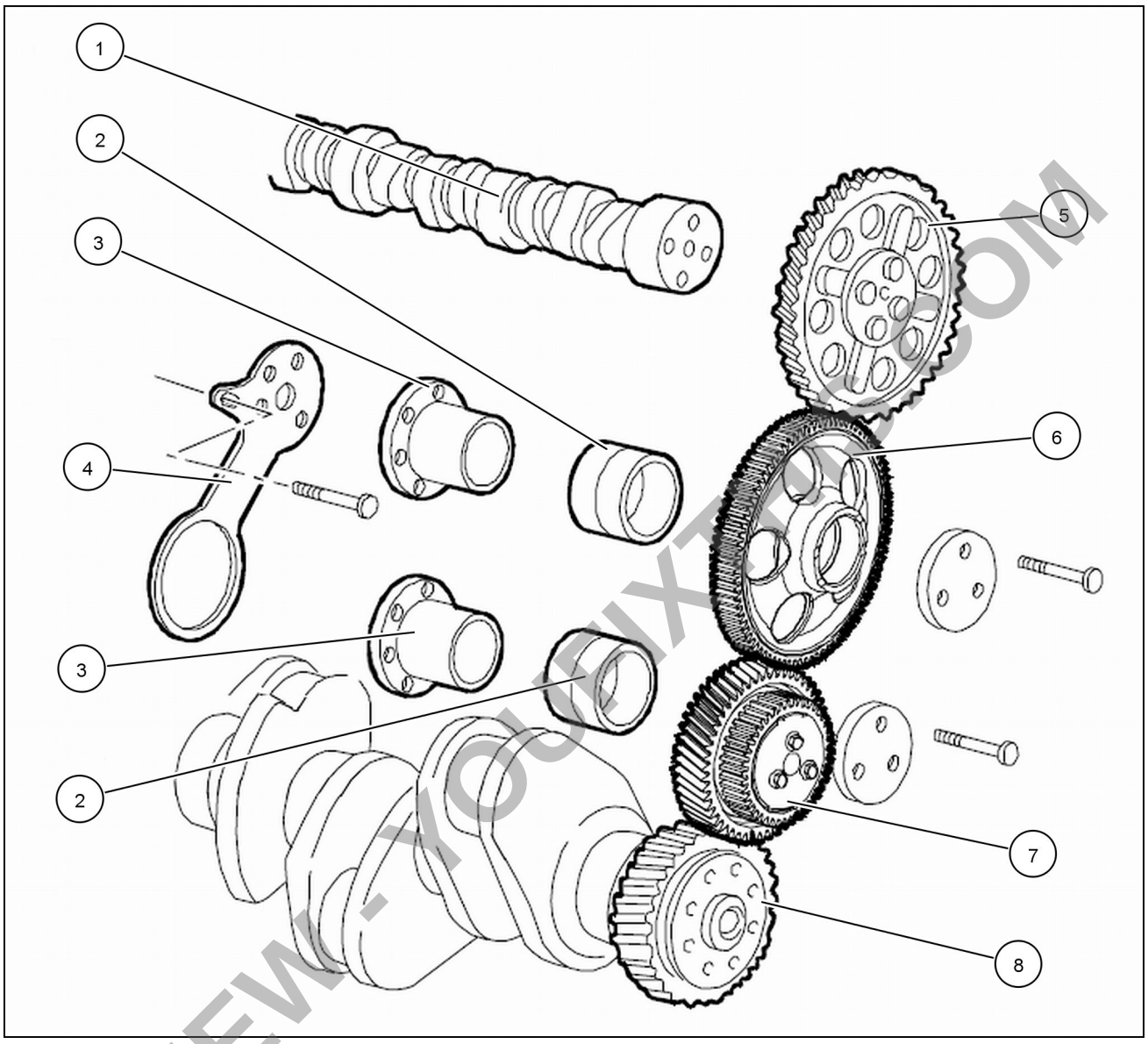
LINERPULLER 1

Next operation:
Crankcase Liner - Measure (10.001)

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Crankcase gears - Overview



TIMINGGEAR 1

(1) - Camshaft
(2) - Bushing
(3) - Pin
(4) - Articulated rod
(5) - Camshaft gear
(6) - Idler gear
(7) - Twin idler gear
(8) - Crankshaft gear

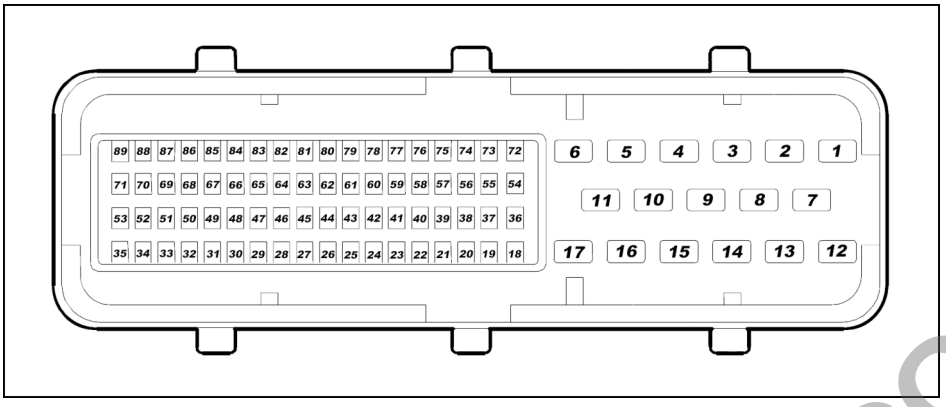
The bushings **(2)** can be replaced when they are worn. They must be pressed out and pressed in from the block side of the gear.

Maximum amount of play between the bushings and the pins:

- Idler gear = **0.045 - 0.075 mm** (**0.0018 - 0.0030 in**)
- Twin idler gear = **0.045 - 0.085 mm** (**0.0018 - 0.0033 in**)

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com



CONNECTORB 4

Chassis connector B

ECU pin out for connector B

ECU pin	Wire number	Function
(1)	-	Free
(2)	7151	+30 positive
(3)	7153	+30 positive
(4)	-	Free
(5)	0151	Ground
(6)	0151	Ground
(7)	-	Free
(8)	7151	+30 positive
(9)	7151	+30 positive
(10)	0151	Ground
(11)	0151	Ground
(12)	0094	Preheat enable relay - (ground)
(13)	-	Free
(14)	-	Free
(15)	-	Free
(16)	-	Free
(17)	-	Free
(18)	-	Free
(19)	-	Free
(20)	-	Free
(21)	-	Free
(22)	-	Free
(23)	-	Free
(24)	-	Free
(25)	-	Free
(26)	-	Free
(27)	-	Free
(28)	-	Free
(29)	5163	EDC system diagnosis inducing - (power supply)
(30)	-	Free
(31)	-	Free
(32)	-	Free
(33)	-	Free
(34)	Green	CAN - L line (ECB)
(35)	White	CAN - H line (ECB)
(36)	-	Free
(37)	-	Free
(38)	-	Free
(39)	-	Free

PREVIEW - YOUFIXTHIS.COM

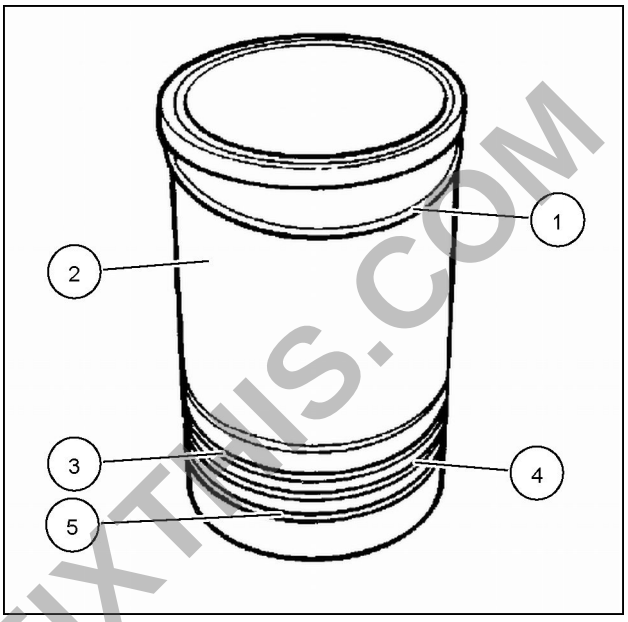
Download full manual at youfixthis.com

Crankcase Liner - Install

Prior operation:
Crankcase Liner - Measure (10.001)

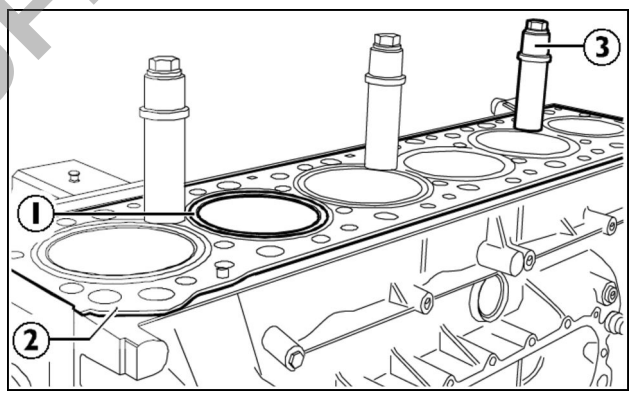
1. Whenever the liners are removed, the water seals **(3)**, **(4)** and **(5)** must be replaced before installing liners into the cylinder block.
2. Install the adjusting ring **(1)** on the cylinder liner **(2)**.
3. Lubricate the seals and install the liner into the cylinder block using the appropriate tool.

NOTE: *The adjustment ring **(1)** is supplied as a spare part with the following thicknesses:*
*- **0.08 mm** (**0.0031 in**)*
*- **0.10 mm** (**0.0039 in**)*
*- **0.12 mm** (**0.0047 in**).*



CYLINDERLINER 1

4. After completing the installation of all the cylinder liners, lock the cylinder liners **(1)** to the block **(2)** with the pins **380000363 (3)**.



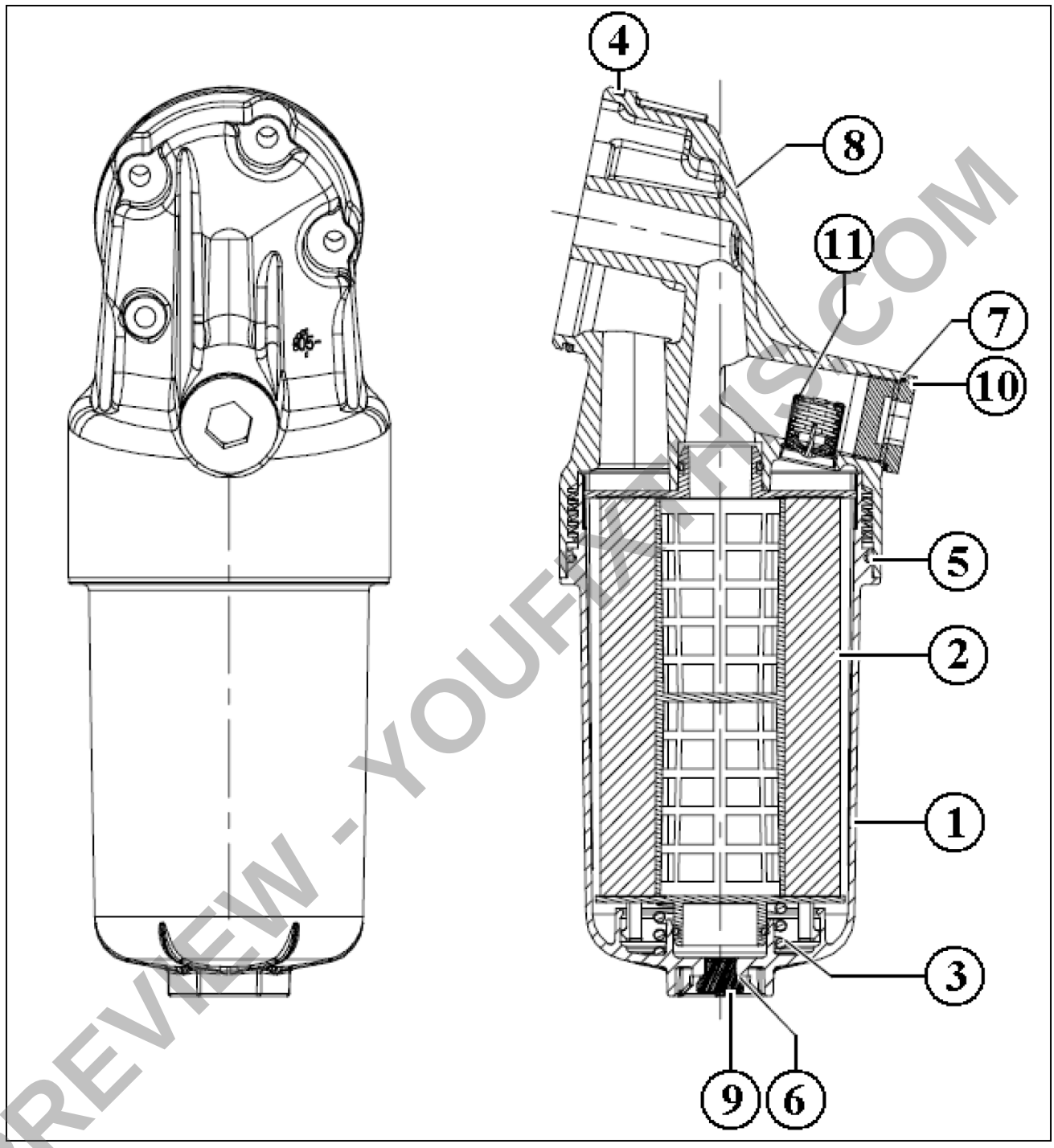
LINERLOCK 2

Next operation:
Crankcase Liner - Measure (10.001)

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Engine oil filter - Overview



OILFILTER 1

(1) Closure cap
(2) Cartridge
(3) Spring
(4) Support O-ring
(5) Tank O-ring
(6) Washer
(7) Washer
(8) Support
(9) Plug M14x1.5
(10) Plug M38x1.5
(11) By pass valve

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Contents

INTRODUCTION

Engine 10

Engine and crankcase 10.001
Cylinder heads 10.101
Pan and covers 10.102
Crankshaft and flywheel 10.103
Connecting rods and pistons 10.105
Valve drive and gears 10.106
Balancer and damper 10.110
Pump drives 10.114
Fuel filters 10.206
Lift pump and lines 10.210
Fuel injection system 10.218
Turbocharger and lines 10.250
Intake and exhaust manifolds and muffler 10.254
Engine lubrication system 10.304
Engine cooling system 10.400
Oil cooler and lines 10.408
Fan and drive 10.414

Electrical systems 55

Fuel injection system 55.010
Engine cooling system 55.012
Engine oil system 55.013
Engine intake and exhaust system 55.014
Engine control system 55.015
Engine starting system 55.201
Alternator 55.301

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

PREVIEW ONLY

You're viewing 12 of 294 pages

The full manual includes:

- All 294 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

Case IH F2CFA614B, F2CFA614C Service Manual

Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual